Post-Amputation Orthopedic Disease in Canine Amputees:
Preliminary Results of an Online Survey

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Amputation not uncommon
(CSU 2000-2013: ~ 1,200 limb amputations)

Amputees have changes in gait

But… do amputees have subsequent clinically significant orthopedic disease?
And THEN what?
What We Already Know (not much)

• 2 case reports
  • Pelvic limb amputee and FHNO – successful  
    (Carpenter et al. 1996)
  • Thoracic limb amputee and shoulder luxation –  
    successful and unsuccessful  (Burton and Owen 2007)

• 1 case series
  • 9 pelvic limb amputees and THA – successful and unsuccessful  
    (Preston et al. 1999)

“What we already know” = NOT MUCH!

What does this mean?
Occurrence of post-amputation orthopedic disorders; surgical and/or medical treatment selection; surgical viability; subjective and objective outcome
Methods

Initial survey to gather respondents posted (www.surveymonkey.com) via Tripawds.com

8 questions

09/26/13 – 11/10/13 (46 days)
Follow-up email questions to those with ortho dz (n=48/125):

For those who underwent surgery (n=19/48) requested medical records and radiographs
Results: Ortho dz – yes or no

- 125 Survey Respondents
  - 76 thoracic limb amputees
  - 49 pelvic limb amputees

- 38% (n=48/125 respondents) **YES** subsequent ortho dz**
- 62% (n=77/125 respondents) NO subsequent ortho dz **

**interpret with caution → bias in phrasing of question to gather respondents**
Results: Ortho dz – yes or no

- **YES** subsequent ortho dz
  - 41% (n=31/76) of thoracic limb amputees
  - 35% (n=17/49) of pelvic limb amputees

- **NO** subsequent ortho dz
  - 59% (n=45/76) of thoracic limb amputees
  - 65% (n=32/49) of pelvic limb amputees
Results: Ortho dz variables

Orthopedic dz: **avg 21 months** (+/- 28 mo’s; range 1-98 months) post-amputation – same for both sx and non-sx

• Thoracic limb amputees w (*REPORTED) ortho dz
  • In contralateral thoracic limb: 45%
  • at least 1 pelvic limb: 68% **
  • BOTH thoracic and pelvic: 13%

• Pelvic limb amputees w ortho dz:
  • In contralateral pelvic limb: 88%
  • in at least 1 thoracic limb: 12%

** Could be partly d/t more catastrophic dz occurring in pelvic limb – hip luxation, CCL rupture, etc – vs thoracic limb – osteoarthritis, DJD, elbow dz, rare luxations – not as compromising
Results: Surgery NOT selected

• 60% (n=29/48) did not select surgery due to:
  • Concurrent neoplastic process (n=9)
  • Arthritis/non-surgical or not recommended front limb dz (elbow/shoulder) (n=11)

• Vet/surgeon did not recommend (n=1)
• Owner choice/risk/fear (n=2)
• Unknown (n=6)
Results: Ortho dz and surgery

• Those selecting surgery for ortho dz: 40% (n=19/48) – all for PELVIC limb disorders **

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Results: Ortho dz and surgery

• Breeds (surgery):
  • Great Pyrenees, Labrador mix, Chow mix, 4 bully/terrier breeds, boxer, min pin, 2 toy poodles

• Reasons for original amputation (surgery):
  • Hit by car, unknown cause – young/when puppy, suspect osteomyelitis, suspect soft tissue sarcoma
Results: Ortho dz and surgery

Surgically repaired disorders (n=19)

- 10 CCL ruptures
  - TPLO (n=7/10)
    - 1 bilateral
  - TTA (n=1/10)
  - Lateral/extracap (n=2/10)
- 3 hip dislocations
  - THR (n=1/3)
  - FHO (n=2/3)
    - 1 bilateral
- 4 patellar luxations
- 1 fracture, 1 unknown
Results: Sx Outcome per owner

• Follow-up correspondence with 12
  • 92% (n=11/12) very pleased with surgery and would recommend
  • 1 dissatisfied – multiple surgeries
Results: Sx Outcome per records

• 8 records obtained thus far
  • Post-op rehab
  • 2 complications from surgery
    • Pelvic: Hip lux surgeries x 3 → THR → good
    • Thoracic: CCL rupture (80 lb dog) → lateral suture stabilization / imbrication → not using → severe hip dysplasia

• 6 others recovered well post-op rechecks
Results: Ortho dz and surgery

• 4 (36%; n=4/11) thoracic limb amputees with pelvic limb surgery ALSO LATER developed ortho dz in contralateral thoracic limb

• None of pelvic limb amputees with pelvic limb surgery also developed reported ortho dz in thoracic limb
Conclusions

- Amputees might get subsequent orthopedic disease (~40% of our survey – PRELIMINARY RESULTS)
  - ** does NOT imply 40% of amputees get ortho dz – skewed questionnaire
  - Occurs **whether thoracic or pelvic limb** amputated (41%, 35%), with similar frequency
  - Occurs average of 21 months after amputation (LARGE range: 1-98 months)
    - Pelvic limb amputees report contralateral pelvic limb disease
    - Thoracic limb amputees REPORTED more pelvic limb disease vs contralateral thoracic limb disease ((HOWEVER - pelvic limb disease is likely more catastrophic, thus reportable, versus thoracic limb disease which might not warrant a notable diagnosis per respondents/owners)
- Surgery was selected ONLY for pelvic limb disorders (n=17), most **CCL ruptures** (n=10), and most of those repaired by **TPLO** (n=7)
  - **Recovery overall good / recommend surgery** - per owner report.
  - Medical record reports pending (**no complications** n=6/8)
- Surgery was not selected due primarily to: concurrent neoplastic process/poor overall px, non-surgical conditions
THANKS!

Tripawds (Rene Agredano)
All of the survey respondents!!